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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/577,830 | 01/24/2007 | Takeshi Karato | 2593-0165PUS1 | 6227 |
| 2292 7590 09/20/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | EXAMINER SCOTT, ANGELA C | |
| | | | ART UNIT 1709 | PAPER NUMBER |
| | | | NOTIFICATION DATE 09/20/2007 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/577,830

Applicant(s)

KARATO ET AL.

Examiner

Angela C. Scott

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 05/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over von Hellens (US 6,407,153).

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Regarding claims 1, 5, 7, and 8, von Hellens teaches an elastomeric composition comprising a solution styrene-butadiene rubber (rubber a)/silica-containing masterbatch (mixture) and a solution polybutadiene (rubber b) (Col. 1, line 63 to Col. 2, line 1). The solution styrene butadiene rubber has a glass transition temperature of between 0° C and -80° C (Col. 2, lines 16-18). The masterbatch is obtained by mixing an aqueous slurry or dispersion of silica with a solution of solution styrene butadiene rubber (Col. 15, lines 35-39) and the solvent is removed to form a masterbatch coagulum (Col. 16, lines 18-19).

Von Hellens does not teach that the rubber-silica mixture contains at least 30% of toluene insoluble components. However, it is well known in the art to change result effective variables such as solubility levels. At the time of the invention, a person of ordinary skill in the art would have found it obvious to optimize the amount of toluene insoluble components through routine experimentation and would have been motivated to do so in order to ensure a good balance between the components of the mixture. See MPEP §2144.05.

Von Hellens does not teach that the polybutadiene rubber has a glass transition temperature such that the difference in absolute value between the glass transition temperature of rubber (b) and that of rubber (a) is 3° C to 100° C. However, it is well known in the art to change result effective variables such as glass transition temperatures. At the time of the invention, a person of ordinary skill in the art would have found it obvious to optimize the glass transition temperature of rubber (b) through routine experimentation and would have been motivated to do so in order to increase the compatibility and processibility between the two rubbers. See MPEP §2144.05.

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Regarding claim 2, von Hellens additionally teaches that that the solution styrene butadiene/silica-containing masterbatch contains from about 40 to about 120 parts by weight of silica per 100 parts by weight of the styrene butadiene (Col. 1, lines 65-67).

Regarding claim 3, von Hellens does not teach that the amount of silica contained in the styrene butadiene rubber/silica mixture is 80 weight percent or less with respect to the entire toluene insoluble components in the styrene butadiene rubber/silica mixture. However, it is well known in the art to change result effective variables such as the amount of silica in the mixture. At the time of the invention, a person of ordinary skill in the art would have found it obvious to optimize the amount of silica contained in the mixture through routine experimentation and would have been motivated to do so in order to promote the desired properties of the end composition, such as lower rolling resistance and better traction when the composition is used in tires. See MPEP §2144.05.

Regarding claim 4, von Hellens additionally teaches that the styrene butadiene rubber/silica masterbatch is dried, after the masterbatch coagulum is formed, at a temperature between about 75° C and about 135° C (Col. 16, lines 18-19 and lines 35-37).

Regarding claim 6, von Hellens does not teach that the polybutadiene rubber has a glass transition temperature such that the difference in absolute value between the glass transition temperature of rubber (b) and that of rubber (a) is 10° C to 95° C. However, it is well known in the art to change result effective variables such as glass transition temperatures. At the time of the invention, a person of ordinary skill in the art would have found it obvious to optimize the glass transition temperature of rubber (b) through routine experimentation and would have been

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motivated to do so in order to increase the compatibility and processibility between the two rubbers. See MPEP §2144.05.

Regarding claim 9, von Hellens additionally teaches that the solution polybutadiene contains from about 40 to about 120 parts by weight of silica per 100 parts by weight of the polybutadiene (Col. 2, lines 1-3).

Regarding claim 10, von Hellens additionally teaches that in the elastomeric composition, the styrene butadiene/silica masterbatch to the polybutadiene/silica masterbatch was in the ratio of 70:30 (Col. 17, lines 9-12).

Regarding claim 11, von Hellens additionally teaches that the elastomeric composition can also contain sulfur, a cross-linking agent (Col. 17, lines 14-15).

Regarding claim 12, von Hellens additionally teaches that the cross-linked elastomeric composition can be molded/made into tires, tire treads, hoses, industrial drive belts, conveyor belts and shoe soles, for example (Col. 1, lines 7-9).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over von Hellens (US 6,407,153).

Von Hellens teaches a method of making an elastomeric composition comprising mixing an aqueous slurry or dispersion of silica with a solution of solution styrene butadiene rubber (Col. 15, lines 35-39), having a glass transition temperature of between 0° C and -80° C (Col. 2, lines 16-18), and then removing the solvent to form a masterbatch coagulum (Col. 16, lines 18-19); heating the styrene butadiene rubber/silica masterbatch, after the masterbatch coagulum is

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formed, at a temperature between about 75° C and about 135° C (Col. 16, lines 18-19 and lines 35-37); and then adding the polybutadiene rubber to the above mixture (Col. 17, lines 9-12).

Von Hellens does not teach that the rubber-silica mixture contains at least 30% of toluene insoluble components. However, it is well known in the art to change result effective variables such as insolubility levels. At the time of the invention, a person of ordinary skill in the art would have found it obvious to optimize the amount of toluene insoluble components through routine experimentation and would have been motivated to do so in order to ensure a good balance between the components of the mixture. See MPEP §2144.05.

Von Hellens does not teach that the polybutadiene rubber has a glass transition temperature such that the difference in absolute value between the glass transition temperature of rubber (b) and that of rubber (a) is 3° C to 100° C. However, it is well known in the art to change result effective variables such as glass transition temperatures. At the time of the invention, a person of ordinary skill in the art would have found it obvious to optimize the glass transition temperature of rubber (b) through routine experimentation and would have been motivated to do so in order to increase the compatibility and processibility between the two rubbers. See MPEP §2144.05.


Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela C. Scott whose telephone number is (571) 274-3303. The examiner can normally be reached on Monday through Friday, 7:30am to 5:00pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ACS 
September 6, 2007


MARK EASHOO, PH.D.
SUPERVISORY PATENT EXAMINER

13/ Sep/07